important. The gases hereby receive a certain guidance, which is given somewhat like that to high-pressure water through the jet nozzle of a lire hose. To attain this aim one makes the burners as long as possible, providing that their undersides are continuously smooth, remaining without depressions or raised portions, and that also in the combustion chamber no projections exist which the gases could beat upon. By those moans one prevents the flame from deviating upwards, whilst its spreading sideways is less hemmed in. The air leads in the blocks wore formerly frequently arranged parallel to the gas ports and so that there was an air port each side of a gas port, and gas and air were side by side in the combustion chamber. Nowadays, one most often arranges the air ports above the gas ports, and gives the air leads in the burners greater pitch than the gas leads, so that the axes of those ports cut across each oilier at a certain distance from the face of the port blocks. Also one often lays the air ports askew, so that the air broadens out fan-like* above the gas. One achieves tints a decidedly bettor apportionment of the air, to the entire combustion chamber, and it may well bo. maintained that furnaces provided with such kinds of port blocks work more sharply than furnaces in which the gas and air passages lie alongside each other.

The checking of the temperature, and the production of the necessary amount of heat, at each instant, forms the main task of the molter, and they are a people exclusively given up to practical experience, who are only seldom receptive of theoretical considerations an to the phenomena of combustion. Nevertheless, it must bo confessed that indeed most frequently the correct ones will bo found. For usually the inelter at the beginning of the heat admits as much gas into the furnace as an open chimney damper and air valve admit this to lay hold of, and perceives an OXCOHH thereof, in that the flame begins to lap out of the doorways, which naturally must be avoided. In proportion an tho charge molts down, he ineroaKOH the temperature of the furnace, and at the conclusion of tho "heat/* where the rciceptibility of tho charge for heat ban gone down considerably, it can become BO great as to bo dangerous to the furnace structure. At this point the art of